

## **Towards the control of a severe form of cassava mosaic disease in Nigeria: diagnostic survey for cassava mosaic begomoviruses**

Ogbe F.O.<sup>1,2</sup>, Dixon A.G.O.<sup>1</sup> and Hughes J.<sup>1</sup>

<sup>1</sup>International Institute of Tropical Agriculture, Ibadan, Nigeria

<sup>2</sup>National Root Crops Research Institute, Umudike, Nigeria

**Abstract.** A diagnostic survey was conducted in the southern states of Nigeria to determine if the Ugandan strain of *East African cassava mosaic virus* (EACMV-UG2) has spread to Nigeria. Farmers' fields (290) were visited in which 946 cassava leaf samples were collected in addition to 220 samples of whitefly vectors. The overall impression of cassava mosaic disease (CMD) symptom severity was recorded as mild, moderately severe or severe. Polymerase chain reaction (PCR) tests were conducted on the samples using nucleotide primers for the detection of *African cassava mosaic virus* (ACMV), *East African cassava mosaic virus* (EACMV) and EACMV-Ug2. CMD symptoms in most farms in Abia, Cross River, Ebonyi, Ekiti and Imo States were either moderately severe or severe. About the same number of farms had moderately severe and severe symptoms in Ogun, Ondo, Osun and Oyo States. CMD symptoms were mild in most farms in Akwa Ibom, Anambra, Delta, Edo, Enugu and River States. ACMV is the dominant species, occurring singly in 62.2% of samples while EACMV alone was detected in 1.1%. Mixed infections by the two viruses occurred in 22.4% of samples and the remaining 14.3% tested negative to the primers. The two viruses were also detected in the whitefly

vectors. Most of the plants doubly infected with ACMV and EACMV were characterised by severe symptoms. A higher proportion (49%) of farms with mixed infections were observed in the survey area compared to the 14.3% recorded in a previous survey conducted in 1998. Biological variants of ACMV were observed of which some induced very severe symptoms. EACMV-UG2 specific primers tested negative to all the samples. Although EACMV-UG2 may not occur in the area surveyed, virulent strains of ACMV and EACMV seemed to occur. The extremely severe symptoms induced by some isolates of ACMV and by the two viruses in mixed infections underscore the need to make available to farmers, desirable resistant cassava genotypes to sustain cassava production in Nigeria.